

REMARKS

The Applicants appreciate the Examiner's thorough examination of the subject application. Applicants request reconsideration of the subject application based on the instant amendments to the claims and the following remarks.

Claims 1 and 3-21 are pending. Claims 1 and 4 have been amended. Support for the amended claims can be found throughout the specification of the original PCT application (for example, page 2, lines 22-26, page 4, lines 14-18, page 10, line 26-page 11, line 2, claims 2 and 4), and the translation thereof including the corrected portion of pages 3-4, 6, 14, 58 and 59 of the specification discussed below.

Applicants have amended the paragraphs on page 3, line 14 - page 4, line 13, page 6, lines 11-page 7 line 3, page 14, line 21 – page 15, line 5, and have provided a verification of the translation of these portions of the specification and of original claims 2 and 4, in order to accurately reflect the original Japanese text of PCT Application No. PCT/JP03/04469. Applicants have also amended Claims 1 and 4 to reflect that the component of the hard segment (A1) of the polyurethane resin recites that the hard segment (A1) comprises a diisocyanate (a1) having a symmetrical structure, and at least one species selected from the group consisting of a low molecular-weight diamine (a2) having a symmetrical structure and a low molecular-weight diol (a3). Support for this amendment is found on page 20 lines 9-15 (corresponding to original PCT application page 15, line 2-4) as follows:

reacting a diisocyanate (a1) having the aforementioned symmetrical structure with a component containing active hydrogen [the aforementioned diamine (a2) and/or the aforementioned diol (a3), and the aforementioned high molecular-weight diol (a4) and, as required, a polymerization terminator (a5)]

This amendment is also supported by the basic chemistry of polyurethane polymers which “are formed by reacting a monomer containing at least two isocyanate functional groups with another monomer containing at least two alcohol groups.”

<http://en.wikipedia.org/wiki/Polyurethane>. In fact, in Tables 1 and 2 in the specification, all production examples are made using a diisocyanate (a1) (HDI or Hydrogenated MDI) and diamine (a2) (Ketimine) and with or without diol (a3), and on page 14, lines 16-20, the specification recites the diamine (a2) and the diol (a3) can be used singly, but are preferably used along with a diamine (a2) and a diol (a3).

The scope of the corrected translation of the present application does not exceed the scope of the originally filed international application in Japanese. The verification, clean copy and marked up copy of the relevant parts of the specification and original claims are attached hereto.

No new matter has been introduced by the instant amendments. Applicants reserve the right to pursue the originally claimed subject matter in this or a subsequent continuation application.

Rejection under 35 U.S.C. §112, first paragraph

Claims 1 and 3-21 stand rejected under 35 U.S.C. §112, first paragraph, due to alleged lack of enablement.

Claim 1 has been amended to incorporate the number average molecular weight of the resin (A) of from 4000 to 40000. Support for the amendment is found on page 20, lines 2-5 of the specification.

The Office Action stated that :

The specification, while being enabling for some limited subset of all polyurethane resins that exhibit the claimed starting softening temperature and difference between softening starting temperature and softening ending temperature, does not reasonably provide enablement for the other such materials not expressly disclosed by Applicants Specification.

Office Action at page 2.

The Office Action further stated :

However, Applicant has not verified that, in fact, any resin (A) adhering to all the structural limitations delineated in present claim 1 will necessarily satisfy the property limitations recited earlier in the claims.

Id.

The rejection is respectfully traversed. Present claim 1 is directed to a material for slush molding, comprising a thermoplastic polyurethane resin (A) having the characteristics recited in the claim. The thermoplastic polyurethane resin (A) used in the present invention should have (1) specified structural features as delineated in Claim 1 and (2) a starting softening temperature and difference between softening starting temperature and softening ending temperature within the specified ranges. The thermoplastic polyurethane resin (A) has significantly restricted features as indicated above (e.g., the number average molecular weight of the resin (A) of from 4000 to 40000), and thus it falls within a substantially narrow range of polyurethane resins. One of skill in the art would be able to make and use the material of claim 1 using no more than routine experimentation in view of the teachings of the present specification. Thus, Applicants believe the specification reasonably provides enablement for the claims as pending.

Given that the thermoplastic polyurethane resin (A) has significantly restricted features as indicated above, the skilled person would be able to satisfy the property limitations recited earlier in the claims without undue experimentation. In fact, in the present specification, there are such teachings from the viewpoint of STi as to (1) the Mn of the hard segment (A1) on page 15, lines 1-5, (2) the content of the hard segment (A1) on page 15, lines 10-16, (3) the Mn of a high molecular-weight diol (a4) on page 15, line 19 through page 16, line 3 and (4) the Mn of the thermoplastic polyurethane resin (A) on page 20, lines 2-5. All these teachings are relevant to STi adjustment. In addition, there are concrete examples in the specification, in particular, in Production Examples 10-14.

Thus, one of ordinary skill in the art could produce a thermoplastic polyurethane resin having the properties recited in the claims by, for example, choosing as the starting point one of the production examples of the specification and changing production parameter such as compounding ratio to some extent, species of diisocyanate and diamine and diol within the listing of the specification and, by changing some of the Mns above for some of the components pursuant to the teachings. Applicants contend that such a process is routine and reasonable in chemical practice.

Therefore, the skilled artisan would be able to achieve the claimed starting softening temperature and difference between softening starting temperature and softening ending temperature without undue experimentation with a thermoplastic polyurethane resin having the specific properties recited by the claims, in view of the ample guidance provided by the specification. In view of the teachings of the specification, the recited characteristics, together with actual results of the disclosed examples, would enable the skilled artisan to determine whether or not the claimed properties would be satisfied with a particular combination of materials furnished in particular amounts.

The Office Action stated that Example 2 of Ohmori '508 "appears to teach" a polyurethane resin that satisfies all of the structural limitations of the claims. Applicants respectfully traverse. The polyurethane in Example 2 of Ohmori uses IPDI and not a diisocyanate having a symmetrical structure; therefore, the polyurethane resin of Ohmori clearly does NOT satisfy all of the structural limitations of the claims. Example 2 of Ohmori discloses heat softening initiation temperature of 143°C, but is silent about the difference between softening starting temperature and softening ending temperature. Applicants hereby provide that the difference between softening starting temperature and softening ending temperature measured by the Applicants is 55°C for Example 2 resin and 56°C for Example 4 resin, in which IPDI was also used. Both of these temperatures are outside the range recited by present claim 1. Thus, Ohmori cannot and does not disclose a material, article, or method according to the present claims.

Accordingly, withdrawal of the rejection is respectfully requested.

CONCLUSION

For at least the foregoing reasons, Applicants believe the pending application is in condition for allowance.

Applicants conditionally request any extension of time required for the consideration of this response. The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1105, under Order No. 62272 (49227).

Dated: December 13, 2007

Respectfully submitted,

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